



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099

September 25, 2012

**MEMORANDUM**

**SUBJECT:** Contract Laboratory Program Data Review  
*Raymond Flores*  
**FROM:** Raymond Flores, Alternate ESAT Regional Project Officer  
Environmental Services Branch (6MD-HL)  
**TO:** Brenda Cook, Superfund Project Manager (6SF-TR)  
Gary Moore, On-Scene Coordinator (6SF-PR)

**Site:** DELTA SHIPYARD  
**Case#:** 42764  
**SDG#:** MF6AK6

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.



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# ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6  
10625 Fallstone Road  
Houston, TX 77099

Alion Science and Technology

## MEMORANDUM

DATE: September 21, 2012  
TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA  
FROM: Linda Hoffman, Data Reviewer, ESAT *LH*  
THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT *DGJ*  
SUBJECT: CLP Data Review

Contract No.:	EP-W-06-030
TO No.:	030
Task/Sub-Task:	2-12
ESAT Doc. No.:	B030-212-0089
TDF No.:	6-12-503B
ESAT File No.:	I-0575

Attached is the data review summary for Case # 42764  
SDG # MF6AK6  
Site Delta Shipyard

## COMMENTS:

### I. LEVEL OF DATA REVIEW

Modified CADRE Review was performed for this data package.

### II. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

The CCS detected a contractually noncompliant item that did not affect technical usability of the results.

### III. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

Some results were qualified for technical problems. The significant problem is addressed below.

The antimony, barium, and thallium matrix spike recoveries were below the QC limit.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 6**  
**HOUSTON BRANCH**  
**10625 FALLSTONE ROAD**  
**HOUSTON, TEXAS 77099**

**INORGANIC REGIONAL DATA ASSESSMENT**

CASE NO. <u>42764</u>	SITE <u>Delta Shipyard</u>
LABORATORY <u>CHEM</u>	NO. OF SAMPLES <u>17</u>
CONTRACT# <u>EP-W-09-038</u>	MATRIX <u>1 Water/16 Soil</u>
SDG# <u>MF6AK6</u>	REVIEWER (IF NOT ESB) <u>ESAT</u>
SOW# <u>ISM01.3</u>	REVIEWER'S NAME <u>Linda Hoffman</u>
SF# <u>303DD2GC</u>	COMPLETION DATE <u>September 21, 2012</u>

SAMPLE NO.	<u>MF6AK6</u>	<u>MF6AL6</u>	<u>MF6AM0</u>	<u>MF6AM4</u>	<u>MF6AN1</u>
	<u>MF6AK7</u>	<u>MF6AL7</u>	<u>MF6AM1</u>	<u>MF6AM5</u>	
	<u>MF6AL4</u>	<u>MF6AL8</u>	<u>MF6AM2</u>	<u>MF6AM6</u>	
	<u>MF6AL5</u>	<u>MF6AL9</u>	<u>MF6AM3</u>	<u>MF6AM7</u>	

DATA ASSESSMENT SUMMARY

	ICP	HG
1. HOLDING TIMES	<u>0</u>	<u>0</u>
2. CALIBRATIONS	<u>0</u>	<u>0</u>
3. BLANKS	<u>0</u>	<u>0</u>
4. MATRIX SPIKES	<u>M</u>	<u>0</u>
5. DUPLICATE ANALYSIS	<u>0</u>	<u>0</u>
6. ICP QC	<u>M</u>	<u>0</u>
7. LCS	<u>0</u>	<u>0</u>
8. SAMPLE VERIFICATION	<u>0</u>	<u>0</u>
9. OTHER QC	<u>N/A</u>	<u>N/A</u>
10. OVERALL ASSESSMENT	<u>M</u>	<u>0</u>

O = Data had no problems.  
 M = Data qualified due to major or minor problems.  
 Z = Data unacceptable.  
 NA = Not applicable.

**ACTION ITEMS:**

**AREAS OF CONCERN:** Matrix spike recoveries were below the QC limit for antimony, barium, manganese, thallium, and zinc. The copper serial dilution difference exceeded the expanded QC limit for soils.

**COMMENTS/CLARIFICATIONS  
REGION 6 CLP QA REVIEW**

**CASE 42764 SDG MF6AK6 SITE Delta Shipyard LAB CHEM**

**COMMENTS:** This SDG consisted of 1 water and 16 soil samples for total metals (by ICP-AES) and mercury analyses following CLP SOW ISM01.3. The sampler designated soil sample MF6AL4 for laboratory QC analyses and water sample MF6AN1 as a rinsate.

The SOW requires that the soil sample results be adjusted for moisture content and dilution, which raised the adjusted QLs above the CRQLs specified in the SOW. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

The analytes of concern with the CRQLs, which are in parentheses, as the desired detection limits were arsenic (1 mg/kg) and barium (20 mg/kg). All soil samples contained both analytes of concern at concentrations over the desired detection limits. The laboratory diluted (up to 10X) and reanalyzed soil samples MF6AK6, MF6AK7, MF6AL9, MF6AM0, MF6AM2, and MF6AM7 because of high concentrations of barium and/or iron.

Modified CADRE review was performed for this package as requested by the Region. For this review option, the CCS and CADRE primarily determine the laboratory contractual compliance and the technical usability of the sample results, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the CADRE report. The CADRE narrative for the SDG is attached to this report as an addendum for additional information.

**DATA ASSESSMENT:** The QC problems affecting data usability are addressed below.

- Because of laboratory blank readings, the results <SQL/CRQLs for cobalt for sample MF6AL9 and iron and zinc for sample MF6AN1 should be considered undetected and were flagged "U" at the SQL/CRQLs on the DST.
- Rinsate sample MF6AN1 contained barium, beryllium, calcium, manganese, and mercury at concentrations below the CRQLs. The reviewer was unable to assess the effect of equipment contamination because information associating the samples with the rinsate was unavailable.
- The reviewer qualified the soil sample results for antimony, barium, and zinc as estimated and biased low because the pre-digestion matrix spike recoveries for these analytes were below the 75% QC limit and the post-digestion matrix spike analyses indicated a low bias effect.

**INORGANIC QA REVIEW  
CONTINUATION PAGE**

**CASE 42764 SDG MF6AK6 SITE Delta Shipyard LAB CHEM**

- The reviewer qualified the manganese and thallium soil sample results as estimated because the pre-digestion matrix spike recoveries for these analytes were below the 75% QC limit. The post-digestion matrix spike analyses did not indicate a bias effect.
- The reviewer qualified the copper soil sample results as estimated because the serial dilution difference for this analyte exceeded the expanded QC limit for soils.

**OVERALL ASSESSMENT:** Some results were qualified for all soil samples because of problems with matrix spike recoveries and a serial dilution difference. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist. The DST included in this report is the final version.

The laboratory response to the CCS was received and placed at the beginning of the data package. The received page should be added to the CSF package as additional information. The laboratory was also contacted by the Region for a few reporting issues (see Resubmission Request). The laboratory responded to the Regional request and submitted the required corrected forms. The resubmitted pages were placed at the beginning of the data package and should be used to replace the corresponding pages in the CSF package.

## INORGANIC ACRONYMS

<b>CADRE</b>	Computer-Aided Data Review and Evaluation
<b>CCB</b>	Continuing Calibration Blank
<b>CCS</b>	Contract Compliance Screening
<b>CCV</b>	Continuing Calibration Verification
<b>CN</b>	Cyanide
<b>CRQL</b>	Contract Required Quantitation Limit
<b>CSF</b>	Complete SDG File
<b>DST</b>	Data Summary Table
<b>HG</b>	Mercury
<b>ICB</b>	Initial Calibration Blank
<b>ICP</b>	Inductively Coupled Plasma
<b>ICP-AES</b>	Inductively Coupled Plasma-Atomic Emission Spectroscopy
<b>ICP-MS</b>	Inductively Coupled Plasma-Mass Spectrometry
<b>ICS</b>	Interference Check Sample
<b>ICV</b>	Initial Calibration Verification
<b>IS</b>	Internal Standard
<b>LCS</b>	Laboratory Control Sample
<b>MDL</b>	Method Detection Limit
<b>NFG</b>	National Functional Guidelines
<b>PE</b>	Performance Evaluation
<b>%D</b>	Percent Difference
<b>%R</b>	Percent Recovery
<b>%RI</b>	Percent Relative Intensity
<b>%RSD</b>	Percent Relative Standard Deviation
<b>QA</b>	Quality Assurance
<b>QC</b>	Quality Control
<b>QL</b>	Quantitation Limit
<b>RPD</b>	Relative Percent Difference
<b>RSCC</b>	Regional Sample Control Center
<b>SDG</b>	Sample Delivery Group
<b>SMO</b>	Sample Management Office
<b>SOW</b>	Statement of Work
<b>SQL</b>	Sample Quantitation Limit
<b>TAL</b>	Target Analyte List

## HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number  
SDG: SDG Number  
EPASAMP: EPA Sample Number  
LABID: Laboratory File/Sample ID  
MATRIX: Sample Matrix  
QCCOD: Sample QC Code  
SMPQUAL: Sample Qualifier  
ANDATE: Sample Analysis Date  
ANTIME: Sample Analysis Time  
CASNUM: Compound CAS Number  
ANALYTE: Compound Name  
CONC: Compound Concentration  
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see  
Inorganic Data Qualifier Definitions on the next page)  
UNITS: Concentration Units  
ADJCRQL: Adjusted Contract Required Quantitation Limit Value  
SMPDATE: Sampling Date  
PRPDATE: Sample Preparation Date  
LRDATE: Laboratory Receipt Date  
LEVEL: Sample Level  
PERSOLD: Sample Percent Solids  
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water  
Samples)  
FINLVOL: Final Sample Volume  
METHOD: Method of Analysis  
STATLOC: Station Location

**Disclaimer:** ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

## INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U** Not detected at reported quantitation limit.
- L** Reported concentration is between the MDL and the CRQL.
- J** Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.
- R** Result is unusable.
- F** A possibility of a false negative exists.
- UC** Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.
- +** High biased. Actual concentration may be lower than the concentration reported.
- Low biased. Actual concentration may be higher than the concentration reported.
- W** The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

CASE	SDG	EPASAMP	LABID	MATRIX	QCCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	PRPDATE	LRDATE	LEVEL	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7429905	Aluminum	271	U	ug/L	271	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440360	Antimony	81.4	U	ug/L	81.4	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440382	Arsenic	13.6	U	ug/L	13.6	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440393	Barium	6.6	LJ	ug/L	271	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440417	Beryllium	1.2	LJ	ug/L	6.8	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440439	Cadmium	6.8	U	ug/L	6.8	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440702	Calcium	184	LJ	ug/L	6780	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440473	Chromium	13.6	U	ug/L	13.6	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440484	Cobalt	67.8	U	ug/L	67.8	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440508	Copper	33.9	U	ug/L	33.9	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7439896	Iron	136	U	ug/L	136	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7439921	Lead	13.6	U	ug/L	13.6	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7439954	Magnesium	6780	U	ug/L	6780	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7439965	Manganese	1.1	LJ	ug/L	20.4	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/16/2012	17:00:00	7439976	Mercury	0.023	LJ	ug/L	0.20	08/09/2012	08/15/2012	08/10/2012	Low	0.0	100	100	CV	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440020	Nickel	54.3	U	ug/L	54.3	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440097	Potassium	6780	U	ug/L	6780	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7782492	Selenium	47.5	U	ug/L	47.5	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440224	Silver	13.6	U	ug/L	13.6	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440235	Sodium	6780	U	ug/L	6780	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440280	Thallium	33.9	U	ug/L	33.9	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440622	Vanadium	67.8	U	ug/L	67.8	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AN1	D3768-09	W	Field_Blank	08/14/2012	22:15:26	7440666	Zinc	81.4	U	ug/L	81.4	08/09/2012	08/14/2012	08/10/2012	Low	0.0	50	50	P	DSE-14-96-445
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7429905	Aluminum	8750		mg/kg	19.0	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440360	Antimony	1.8	LJ-	mg/kg	5.7	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440382	Arsenic	10.4		mg/kg	0.95	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:47:47	7440393	Barium	6320	J-	mg/kg	190	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440417	Beryllium	0.88		mg/kg	0.47	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440439	Cadmium	1.99		mg/kg	0.47	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440702	Calcium	7280		mg/kg	47.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440473	Chromium	27.8		mg/kg	0.95	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440484	Cobalt	8.1		mg/kg	4.7	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440508	Copper	41.1	J	mg/kg	2.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7439896	Iron	20900		mg/kg	9.5	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7439921	Lead	103		mg/kg	0.95	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7439954	Magnesium	3910		mg/kg	47.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7439965	Manganese	555	J	mg/kg	1.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/22/2012	16:32:00	7439976	Mercury	0.16		mg/kg	0.12	08/09/2012	08/21/2012	08/10/2012	Low	73.7	.58	100	CV	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440020	Nickel	27.6		mg/kg	3.8	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440097	Potassium	1470		mg/kg	47.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7782492	Selenium	2.6	LJ	mg/kg	3.3	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440224	Silver	0.20	LJ	mg/kg	0.95	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440235	Sodium	307	LJ	mg/kg	47.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440280	Thallium	2.4	UJ	mg/kg	2.4	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440622	Vanadium	24.6		mg/kg	4.7	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK6	D3768-01	S	Field_Sample	08/20/2012	18:43:29	7440666	Zinc	302	J-	mg/kg	5.7	08/09/2012	08/15/2012	08/10/2012	Low	73.7	1.43	100	P	DSE-11-12-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7429905	Aluminum	8340		mg/kg	19.9	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7440360	Antimony	2.3	LJ-	mg/kg	6.0	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7440382	Arsenic	17.5		mg/kg	1.0	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:56:45	7440393	Barium	5700	J-	mg/kg	199	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7440417	Beryllium	0.99		mg/kg	0.50	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7440439	Cadmium	0.59		mg/kg	0.50	08/09/2012	08/15/2012	08/10/2012	Low	67.9	1.48	100	P	DSE-11-24-515
42764	MF6AK6	MF6AK7	D3768-02	S	Field_Sample	08/20/2012	18:52:14	7440702	Calcium	6810		mg/kg	4									









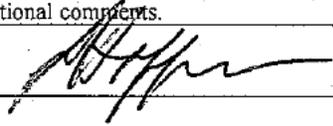
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7429905	Aluminum	10300		mg/kg	18.4	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440360	Antimony	0.76	LJ-	mg/kg	5.5	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440382	Arsenic	7.6		mg/kg	0.92	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440393	Barium	234	J-	mg/kg	18.4	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440417	Beryllium	1.2		mg/kg	0.46	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440439	Cadmium	0.19	LJ	mg/kg	0.46	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440702	Calcium	6980		mg/kg	459	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440473	Chromium	14.0		mg/kg	0.92	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440484	Cobalt	12.9		mg/kg	4.6	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440508	Copper	28.0	J	mg/kg	2.3	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7439896	Iron	19900		mg/kg	9.2	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7439921	Lead	25.4		mg/kg	0.92	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7439954	Magnesium	5210		mg/kg	459	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7439965	Manganese	229	J	mg/kg	1.4	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/22/2012	16:43:00	7439976	Mercury	0.056	LJ	mg/kg	0.22	08/09/2012	08/21/2012	08/10/2012	Low	40.2	.57	100	CV	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440020	Nickel	37.7		mg/kg	3.7	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440097	Potassium	1510		mg/kg	459	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7782492	Selenium	3.1	LJ	mg/kg	3.2	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440224	Silver	0.92	U	mg/kg	0.92	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440235	Sodium	1640		mg/kg	459	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440280	Thallium	2.3	UJ	mg/kg	2.3	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440622	Vanadium	31.7		mg/kg	4.6	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM6	D3768-07	S	Field_Sample	08/20/2012	19:35:41	7440666	Zinc	69.0	J-	mg/kg	5.5	08/09/2012	08/15/2012	08/10/2012	Low	40.2	2.71	100	P	DSE-21-96-515
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7429905	Aluminum	7840		mg/kg	20.5	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440360	Antimony	1.1	LJ-	mg/kg	6.1	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440382	Arsenic	10.2		mg/kg	1.0	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:44:10	7440393	Barium	3390	J-	mg/kg	205	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440417	Beryllium	0.78		mg/kg	0.51	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440439	Cadmium	0.48	LJ	mg/kg	0.51	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440702	Calcium	4490		mg/kg	512	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440473	Chromium	15.4		mg/kg	1.0	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440484	Cobalt	6.7		mg/kg	5.1	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440508	Copper	24.2	J	mg/kg	2.6	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7439896	Iron	17300		mg/kg	10.2	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7439921	Lead	58.8		mg/kg	1.0	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7439954	Magnesium	4040		mg/kg	512	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7439965	Manganese	257	J	mg/kg	1.5	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/22/2012	16:45:00	7439976	Mercury	0.078	LJ	mg/kg	0.12	08/09/2012	08/21/2012	08/10/2012	Low	71.3	.57	100	CV	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440020	Nickel	29.2		mg/kg	4.1	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440097	Potassium	1340		mg/kg	512	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7782492	Selenium	2.6	LJ	mg/kg	3.6	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440224	Silver	1.0	U	mg/kg	1.0	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440235	Sodium	437	LJ	mg/kg	512	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440280	Thallium	2.6	UJ	mg/kg	2.6	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440622	Vanadium	22.7		mg/kg	5.1	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525
42764	MF6AK6	MF6AM7	D3768-08	S	Field_Sample	08/20/2012	19:39:51	7440666	Zinc	99.3	J-	mg/kg	6.1	08/09/2012	08/15/2012	08/10/2012	Low	71.3	1.37	100	P	DSE-14-48-525

# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. <u>42764</u>	SDG No. <u>MF6AK6</u>	SDG Nos. To Follow	Mod. Ref. No.	Date Rec <u>09/04/12</u>
EPA Lab ID: <u>CHEM</u>		<b>ORIGINALS</b>		
Lab location: <u>Mountainside, NJ</u>		<b>CUSTODY SEALS</b>		
Region: <u>6</u>	Audit No.: <u>42764/MF6AK6</u>	1. Present on package? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
Resubmitted CSF? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		2. Intact upon receipt? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
Box No(s): <u>1</u>		<b>FORM DC-2</b>		
COMMENTS:  <u>Item Description</u>		3. Numbering scheme accurate? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		4. Are enclosed documents listed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		5. Are listed documents enclosed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		<b>FORM DC-1</b>		
		6. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		7. Complete? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		8. Accurate? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		<b>TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)</b>		
		9. Signed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		10. Dated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		<b>AIRBILLS/AIRBILL STICKER</b>		
		11. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		12. Signed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		13. Dated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		<b>SAMPLE TAGS</b>		
		14. Does DC-1 list tags as being included? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		15. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
		<b>OTHER DOCUMENTS</b>		
16. Complete? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A				
17. Legible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A				
18. Original? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A				
18a. If "NO", does the copy indicate where original documents are located? <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A				

Over for additional comments.

Audited



Linda Hoffman/ESAT Data Reviewer

Date 09/07/12

Audited

Signature

Printed Name/Title

Date

DC-2

In Reference To Case No(s):  
42764 SDG: MF6AK6 (I-0575)

**Contract Laboratory Program  
REGIONAL/LABORATORY COMMUNICATION SYSTEM**

**Resubmission Request**

Laboratory Name: CHEM  
Lab Contact: Divya Mehta  
Region: 6  
Regional Contact: Raymond Flores - EPA  
ESAT Reviewer: Linda Hoffman - ESAT

In reference to data for the following fractions:

ICP-AES

**Summary of Questions/Issues:**

1. On Form 5, the entries in the "Spike Sample Result" and "Spike Added" columns could not be reproduced. In addition, a % Solids result of 0.00 was entered instead of 55.4. Please correct and resubmit this form and the Form 1s as necessary.
2. On Forms 1 and 8, the copper, vanadium, and zinc results were not "E"-flagged although the %Ds were >10% and the initial sample results were >50X the MDLs reported on the Form 9 on page 95 (ISM01.3, p. B-34, sec. 3.4.10.2.5). Please correct and resubmit Forms 1 and 8 as necessary.

**NOTE:** Any submitted laboratory resubmission should be clearly marked as "Additional Data" with a cover letter included describing what data is being delivered, which Case the data pertains, and who requested the data (ISM01.3, p. B-8, sec. 2.2.1). Custody seals are required only for regular mail shipments.

Please respond to the above item **within 6 business days (ISM01.3, p. B-8, sec. 2.2)** by e-mail to [Flores.Raymond@epa.gov](mailto:Flores.Raymond@epa.gov). If you have any questions, please contact Mr. Flores at 281-983-2139.

**Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy**





**ADDENDUM**

**CADRE NARRATIVE**

**National Functional Guidelines Report #03**

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

**Data Review Reports**

Blanks

Blanks	Hg
NCB05	The following samples have no detected analytes. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	PBS01
	Mercury PBS01
Blanks	Hg
NCB06	The following samples have no detected analytes. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	PBS01
	Mercury PBS01
Blanks	Hg
ND15	The following samples have analyte results greater than or equal to MDLs. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Mercury MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
Blanks	Hg
ND16	The following samples have analyte results greater than or equal to MDLs. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Mercury MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1

## National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

## Data Review Reports

## Blanks

Blanks	ICP_AES
NCB05	The following samples have no detected analytes. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF6AL4L
	Antimony MF6AL4L
Blanks	ICP_AES
NCB06	The following samples have no detected analytes. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	PBW01, MF6AN1, MF6AL4L
	Vanadium PBW01, MF6AN1
	Sodium PBW01, MF6AN1
	Chromium MF6AN1
	Barium PBW01
	Beryllium PBW01
	Aluminum PBW01, MF6AN1
	Antimony MF6AL4L
	Copper MF6AN1
	Magnesium MF6AN1
	Iron PBW01
Blanks	ICP_AES
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF6AL4L, MF6AL4A, MF6AN1
	Nickel MF6AL4L
	Antimony MF6AL4A
	Iron MF6AN1
Blanks	ICP_AES
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF6AN1, PBW01, MF6AL4L, MF6AL9, MF6AL4A, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1
	Calcium MF6AN1

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Blanks

Blanks	ICP_AES
	Chromium PBW01
	Nickel MF6AL4L
	Potassium PBW01
	Copper PBW01
	Cobalt MF6AL9, MF6AL4L
	Barium MF6AN1
	Zinc PBW01, MF6AN1
	Beryllium MF6AN1
	Antimony MF6AL4A
	Cadmium MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1
	Iron MF6AN1
	Manganese MF6AN1
Blanks	ICP_AES
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A
	Arsenic LCS
	Barium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Nickel LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Thallium MF6AL4A
	Manganese MF6AL4A
	Iron LCS
Blanks	ICP_AES
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	MF6AL4A, LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4S
	Vanadium MF6AL4A

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Data Review Reports

Blanks

Blanks	ICP_AES
	Calcium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Nickel LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Potassium LCS
	Copper LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A
	Barium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Cobalt LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1, MF6AL4L
	Aluminum LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Beryllium LCS
	Antimony MF6AL4A
	Thallium MF6AL4A
	Cadmium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AL4S, MF6AL9
	Magnesium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Iron LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Manganese LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A
Blanks	ICP_AES
ND15	The following samples have analyte results greater than or equal to MDLs. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes. LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Antimony LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Potassium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
Blanks	ICP_AES
ND16	The following samples have analyte results greater than or equal to MDLs. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes. LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L
	Sodium LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L

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Blanks

Blanks	ICP_AES
	Barium LCS
	Potassium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
Blanks	ICP_AES
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS
	Chromium LCS
	Zinc LCS
	Potassium LCS
	Copper LCS

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Detection Limit

Detection Limit	Hg
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF6AN1, MF6AK7, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM1
	Mercury MF6AN1 , MF6AK7 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AM1

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## Detection Limit

Detection Limit	ICP AES
NDLI	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF6AL4L, MF6ANI, PBW01, MF6AK6, MF6AM2, MF6AM7, MF6AL7, MF6AL8, MF6AL9, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AM0, MF6AM1, MF6AL4A, MF6AK7
	Vanadium MF6AL4L
	Calcium MF6ANI
	Chromium PBW01
	Nickel MF6AL4L
	Potassium MF6AL4L, PBW01
	Copper PBW01
	Sodium MF6AK6, MF6AM2, MF6AM7, MF6AL7, MF6AL8, MF6AL9, MF6AL4L
	Selenium MF6AK6, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A
	Barium MF6ANI
	Cobalt MF6AL9, MF6AL4L
	Beryllium MF6ANI, MF6AL4L
	Zinc MF6ANI, PBW01
	Antimony MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4A
	Thallium MF6AK7
	Cadmium MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1
	Iron MF6ANI
	Manganese MF6ANI
	Silver MF6AK6, MF6AK7, MF6AM2, MF6AL9, MF6AM0

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Matrix Spikes

Matrix Spikes	ICP_AES
NG07	The following Matrix Spike samples have percent recoveries less than 30% and post-digestion spike samples have percent recoveries less than 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Arsenic MF6AL4S
	Barium MF6AL4S
	Zinc MF6AL4S
	Manganese MF6AL4S
Matrix Spikes	ICP_AES
NG10	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries less than 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Vanadium MF6AL4S
	Selenium MF6AL4S
	Chromium MF6AL4S
	Antimony MF6AL4S
	Copper MF6AL4S
Matrix Spikes	ICP_AES
NG11	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Thallium MF6AL4S

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Serial Dilution

Serial Dilution	ICP AES
NL031	The following ICP-AES Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Calcium MF6AL4L
	Barium MF6AL4L
	Zinc MF6AL4L
	Magnesium MF6AL4L
	Manganese MF6AL4L
	Iron MF6AL4L